

Right Triangles Worksheet 6 - Answers

1. Determine whether a triangle with side lengths 5, 7, and 10 is a right triangle.
No, it is not.
2. Joe strung a 12-yard rope from the bottom of one flagpole to the top of another. He measured the angle of elevation of the rope as 38° . What is the distance between the two flagpoles?
7.4 yd
3. When Bill asked Sue out to a movie Saturday night, she responded by telling him to go fly a kite. He took that response literally. He has measured the angle of elevation of his kite string as 24° . It is flying 6 meters off the ground, directly above Sue. How far is Sue from Bill?
13.5 m
4. A new park is being built at the intersection of First Avenue and Madison Street. It will be in the shape of a right triangle, with the right angle being at the intersection of the streets. It will span 16 yards along First Avenue, and 30 yards along Madison Street. How long is the third side of the park?
34 yd
5. A recently discovered Picasso painting of a hen measured 58 cm along its diagonal. Its height was 40 cm. How wide is the painting?
42 cm
6. Pools 'R' Us has an order to dig a custom pool that, viewed from the side, is a right triangle. They have been instructed to dig it 45 feet at its deep end with an angle of depression of 40° . How long will the pool be across the top?
53.6 ft
7. That custom Pools 'R' Us pool will be 30 feet wide. How many gallons of water will it take to fill the pool to its brim? (Assume that 1 cubic foot equals 7.5 gallons.)
271,350 gal
8. Seven Flags Theme Park is building a MegaSlide ride and needs to calculate the angle at which the slide declines. Riders will have to climb some mega stairs to get to the start of the slide, but the park's hope is that the thrill of sliding down will counteract how tired the guests feel from climbing the steps. The slide itself is 65 meters long and it runs 42 meters from the base of the stairs to the end of the ride. What is the angle of depression of the slide?
 49.7°
9. A new art installation at the Sculpture Park features a large right triangle made of aluminum that has an 18 foot flat top and a 29 foot hypotenuse. What are the angles of the aluminum triangle?
 $\alpha = 51.6^\circ$, $\beta = 38.4^\circ$.
10. A cable car in the Alps carries passengers up to the top of one mountain where they can hang out in a Bavarian ski lodge and enjoy a cup of hot cocoa made with locally produced German chocolate. The car covers 17 kilometers of ground (as measured from the start of the ride to the center of the

mountain) and travels at an average angle of 48° . What distance do the riders

actually travel?
25.4 km